



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/730,200	12/05/2000	Jon Schmidt Kindred	899.036US1	7265

21186 7590 04/09/2007
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. BOX 2938
MINNEAPOLIS, MN 55402

EXAMINER

MEI, XU

ART UNIT	PAPER NUMBER
----------	--------------

2615

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 09/730,200	Applicant(s) KINDRED ET AL.	
	Examiner Xu Mei	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/22/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This communication is responsive to the applicant's amendment dated 12/27/2006.

Election/Restrictions

2. Applicant's request for consideration of claims 11-15, 3-5, and 9-10 are considered and deemed persuasive. Claims 1-20 are therefore being considered in this office action. Currently, claims 1-20 are pending.

Response to Amendment

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2615

5. Claims 1, 3, 6-7, 11-15 and 16-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Holube et al (US-6,198,830, hereafter, Holube).

Regarding claims 1, 11, 12, and 16, Holube discloses a hearing aid for processing an input signal or an apparatus for processing a digital audio signal in Figs. 1-2, comprising: a microphone, a digital processor or detector including an inhibitor having an envelop detector for smoothing the input signal to inhibits or excludes or reduces distortions arising from apparent modulation (modulation frequency analysis), an adjuster (AGC amplification element that inherently having preamplifier) to adjust amplification of the digital audio signal, and a sampler (frequency band synthesis module) to sample the amplified input signal.

Regarding claim 3, see col. 3, lines 45-47 of Holube.

Regarding claim 13, see A/D converter 3 in Fig. 1 of Holube.

For what's called for in claims 14, 17, see Fig. 2, filters 14 and 14', where the direct current of the two signals is filtered out and magnitudes of the signals are approximated.

Regarding claim 15, see D/A converter 10 in Fig. 1 of Holube.

Claims 6-7 are similar to claim 16-17 except for being couched in method terminology; such methods would be inherent when the structure is shown in the references.

Claim Rejections - 35 USC § 103

Art Unit: 2615

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 4-5, 8-10 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holube in view of IBM (IBM Tech Disclosure Bulletin, 1993).

Regarding claims 2, 4-5 and 18, Holube discloses the AGC device for processing a digital signal for a hearing aid as discussed above, and including two filters 14 and 14' as shown in Fig. 2 for smoothing the envelop detected signal. However, Holube does not disclose the inhibitor or detector including a Hilbert filter. Hilbert filter is old and well known in the art for signal processing. IBM discloses a power estimator for AGC circuit including the well known Hilbert filter for power level estimating of a signal for the advantage of accurate calculation of the signal power. And the output of the Hilbert filter that is yielded both real and imaginary components of the signal, i.e., two signals that are 90 degree out of phase with each other or orthogonal to each other in phase (per claim 2). Therefore, it would have been obvious to one of ordinary skill in the art to modifies the AGC device of Holube by having the old and well know Hilbert filter, as shown by IBM, for estimating power of the signal for the inhibitor or detector in order to have the advantage of accurate calculation of the signal power.

Regarding claims 19-20, Holube discloses the inhibitor or detector is including power calculation or determination of the signal (col. 4, lines 37-49). And IBM discloses

Art Unit: 2615

the AGC device is scaling or processing the signal over a range of power values. The claimed mathematical formula or functions as of claims 19 and 20 is the general mathematical formula or functional representation of the power calculation during envelope smoothing of the signals of as shown by Holube or IBM.

Claims 8-10 are similar to claims 18-20 except for being couched in method terminology; such methods would be inherent when the structure is shown in the references.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ludvigsen is made of record here as pertinent art to the claimed invention. Ludvigsen discloses a dynamic automatic gain control circuit in hearing aid.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xu Mei whose telephone number is 571-272-7523. The examiner can normally be reached on maxi flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

2



Xu Mei
Primary Examiner
Art Unit 2615
03/28/2007